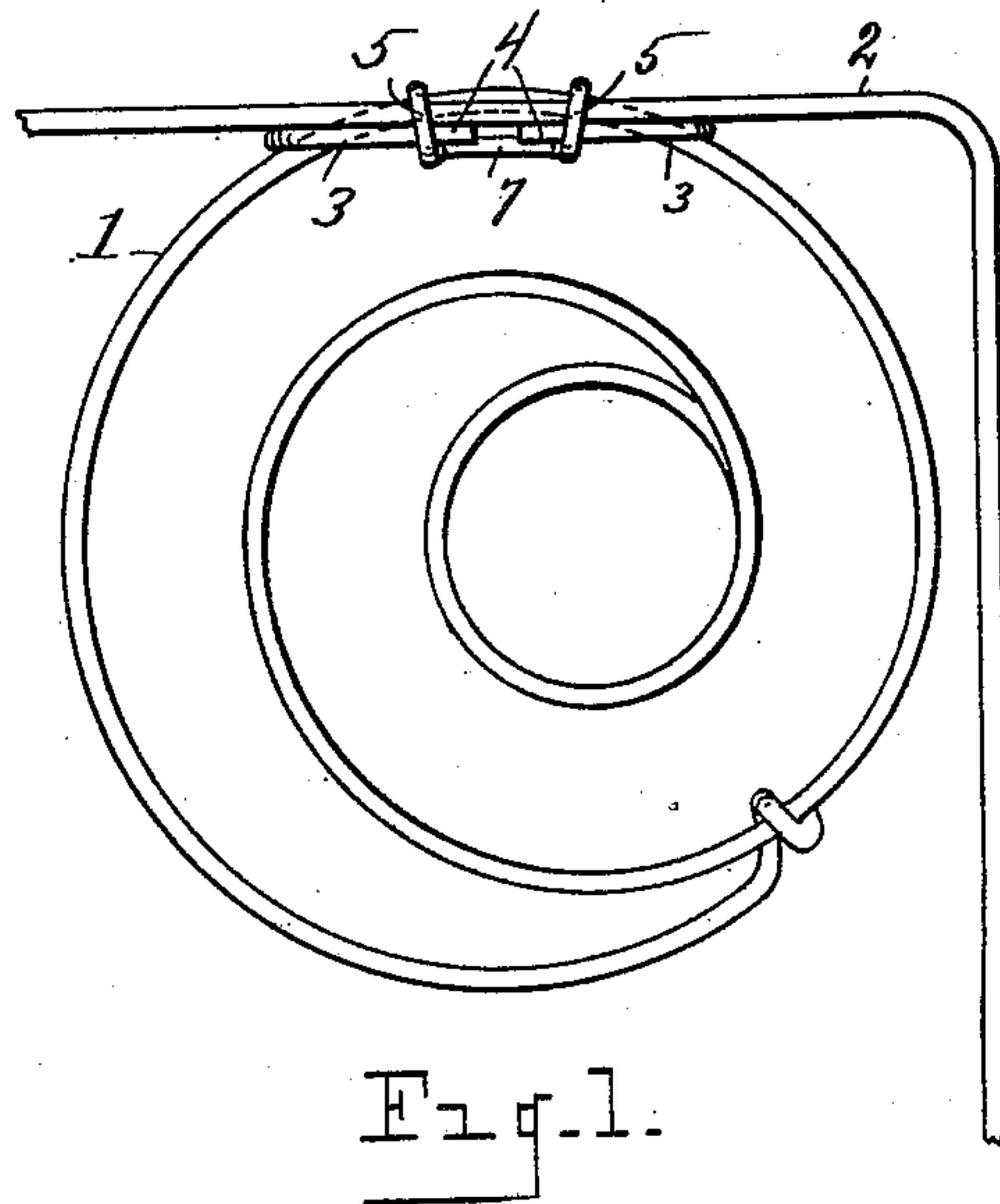
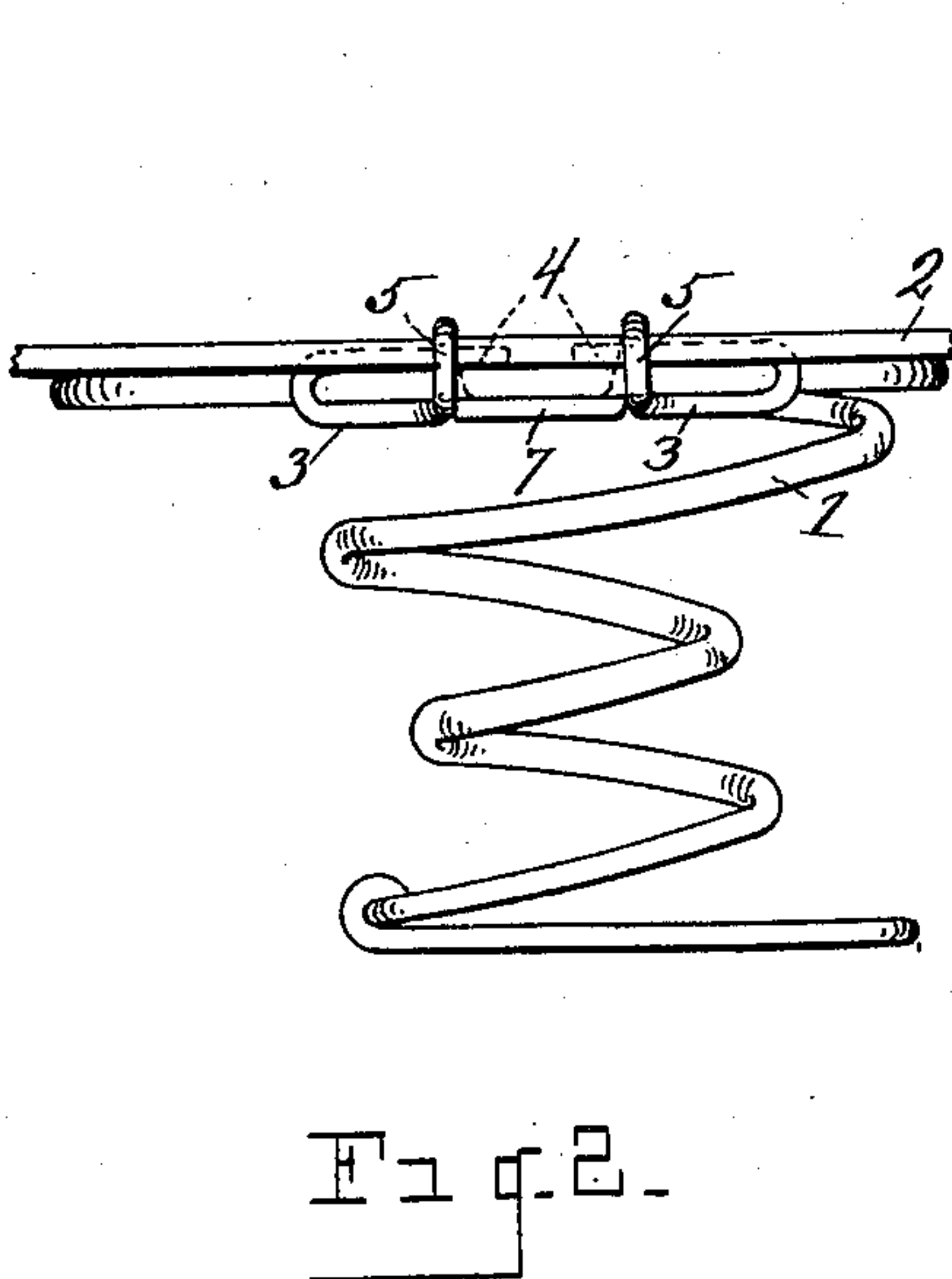
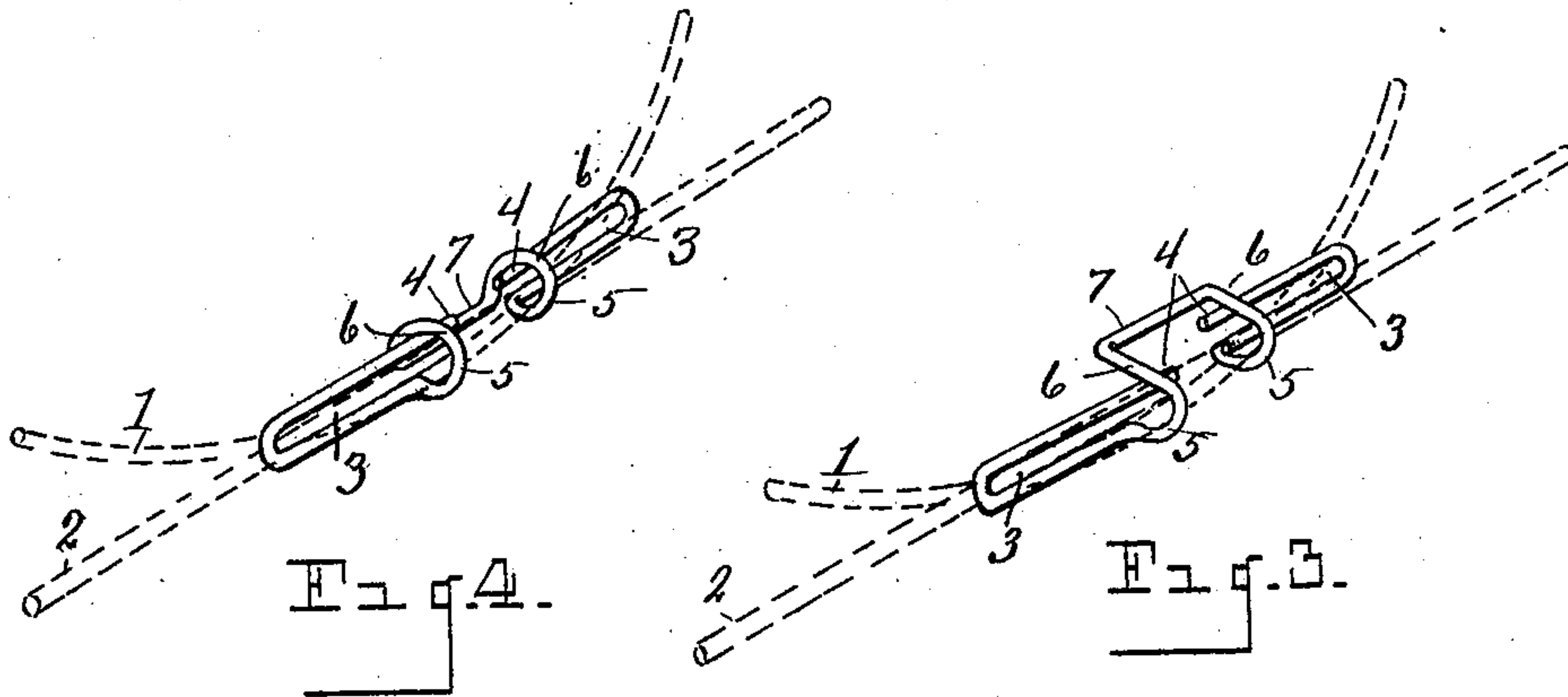


W. H. BATES.
CLIP FOR ATTACHING SPRINGS TO CROSS BARS.
APPLICATION FILED NOV. 11, 1905.

916,974.

Patented Apr. 6, 1909.



Witnesses.
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UNITED STATES PATENT OFFICE.

WILLIAM H. BATES, OF BATTLE CREEK, MICHIGAN.

CLIP FOR ATTACHING SPRINGS TO CROSS-BARS.

No. 916,974.

Specification of Letters Patent.

Patented April 6, 1909.

Application filed November 11, 1905. Serial No. 236,810.

To all whom it may concern:

Be it known that I, WILLIAM H. BATES, a citizen of the United States, residing at Battle Creek, in the county of Calhoun, State of Michigan, have invented certain new and useful Improvements in Clips for Attaching Springs to Cross-Bars; and I do declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same, reference being had to the accompanying drawings, and to the figures of reference marked thereon, which form a part of this specification.

This invention relates to new and useful improvements in wire clips for attaching coiled springs in spring cushions to the marginal wire of the cushion frame, or to the cross wires of the frame between said springs, and consists in the construction and arrangement of parts hereinafter fully set forth and pointed out particularly in the claims.

The object of the invention is to provide a simple and inexpensive clip formed preferably of wire, wherein the arrangement is such as to enable the curved wire of a spring to be quickly and securely attached to the bar of the frame in which the spring is supported, provision being made for covering the ends of the wire from which the clip is formed, so as to prevent the undue protrusion thereof, and for presenting a smooth exterior appearance to the clip.

The above object is attained by the structure illustrated in the accompanying drawings, in which:—

Figure 1 is a plan view, showing the use of my improved clip in attaching a spring to the bar of the frame. Fig. 2 is a side elevation. Fig. 3 is a perspective view of the clip before being applied to the spring, showing by dotted lines the position of the spring and the bar of the frame. Fig. 4 is a similar view, showing the clip closed or clamped upon said parts for the purpose of attaching the spring to the bar.

Referring to the characters of reference, 1 designates a coiled spring commonly used in upholstery and 2 the bar of a frame in which the springs are mounted to form a spring cushion or similar article. In order to support the springs in a vertical position, it is necessary that they be secured to the bar of the frame, as shown in Fig. 1. It will be noted that the top of the spring describes a circle and that the bar 2 is straight. To join

the curved or circular wire of the spring to the straight bar of the frame, I employ the wire clip, as shown, which consists of the end portions formed into oblong loops 3, by bending the strand from which the clip is formed, onto itself, the free ends 4 of the strand standing opposed to each other in the same horizontal plane. From the inner terminals of said loops the strand is bent outwardly and is curved to form the semi-circular portions 5, having the straight rearwardly projecting terminals 6 which cross the free ends 4 of the strand, said terminals being connected by the straight transverse portion or bar 7. In applying said clip to join the spring to the bar, as shown in Fig. 1, the loops 3 of the clip are caused to embrace the curved top wire of the spring, while the curved or semi-circular portions 5 also receive said spring as well as the bar 2, when, by any suitable tool, the clip is clamped onto said parts by bending the straight portions 6 downwardly around the ends 4 of the strand and the wire of the spring, the transverse portion 7 joining the straight terminals 6, lying between the terminals of the loops 3, as clearly shown in Fig. 2, causing said straight portions 6 to describe arcs of circles in conformity with the circular portions 5 and disposing of the straight transverse portion 7, so as to cause it to lie within the plane of the lower sides of the loop 3.

Because of the fact that the upper wire of the spring is embraced within the loops 3, said spring is securely held from tipping, while the circular portions of the clip embracing the upper wire of the spring, the bar 2 and the terminals 4 of the clip, firmly bind said parts together and rigidly unite the spring and bar, at the same time confining the ends of the clip in a manner to prevent their protrusion, obviating the liability of said ends becoming caught upon or entangled with any of the other parts, or with the material of the cushion, while the straight portion 7 connecting the terminals of the circular portions of the clip, lying as it does, within the plane of the loops 3, produces a smooth and finished exterior free from sharp or angular projections, at the same time affording a clip that may be quickly and securely attached.

Having thus fully set forth my invention, what I claim as new and desire to secure by Letters Patent is:—

1. A clip for the purpose described, con-

sisting of the oblong end loops formed of parallel strands and adapted to receive the curved wire of a spring the free ends of the strands forming said loops standing opposed to each other and in the same horizontal plane, semi-circular portions in which said curved wire also lies, and which receive the straight strand, said semi-circular portions having their terminals joined by a transverse bar which connects the two halves of the clip.

2. A clip for the purpose described, consisting of the opposed loops having inwardly extending free ends, curved central portions lying in a plane at right angles to said loops and embracing said ends, said curved central portions being joined by a transverse bar which lies in the plane of the loops when the clip is closed.

3. A clip for the purpose set forth, consisting of opposed oblong loops formed by bending a strand upon itself, the ends of said strand extending inwardly and lying in op-

posed relation, the central portion of the strand being formed into curved members adapted to receive the parts to be joined, and also embracing the ends of the strand forming said loops, said curved central portions being joined by a transverse bar which, when the clip is closed, lies between the ends of said loops within the plane thereof.

4. A clip for the purpose set forth, comprising opposed end loops, having free inwardly extending ends, curved portions formed in a plane at right angles to said loops and embracing said ends, and a transverse bar joining the terminals of said curved portions.

In testimony whereof, I sign this specification in the presence of two witnesses.

WILLIAM H. BATES.

Witnesses:

E. S. WHEELER,

I. G. HOWLETT.